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Organizational empowerment and hardiness as predictors of innovativeness

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ORGANIZATIONAL EMPOWERMENT AND HARDINESS AS PREDICTORS OF INNOVATIVENESS

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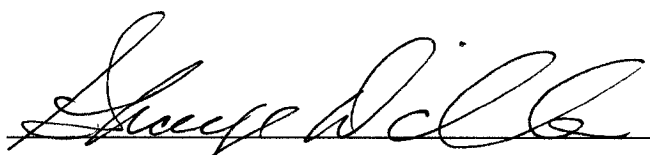

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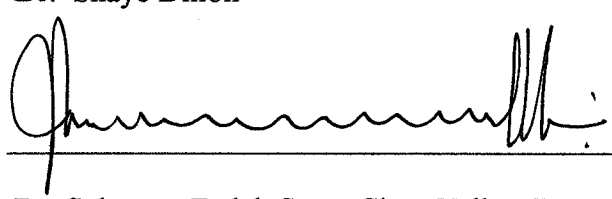

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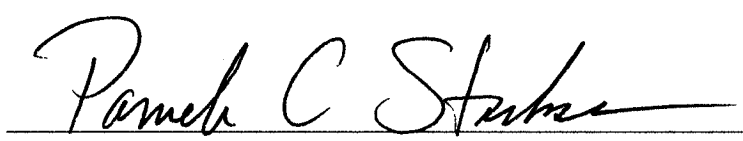

ABSTRACT

ORGANIZATIONAL EMPOWERMENT AND HARDINESS

AS PREDICTORS OF INNOVATIVENESS

by Leif Christian Roberg

The purpose of this study was to show that organizational empowerment and psychological hardiness are positively related to individual innovativeness, where psychological hardiness functions as a moderator between organizational empowerment and innovativeness. A paper-and-pencil survey was filled out by 266 graduate and undergraduate students. Results indicated that organizational empowerment and hardiness were positively related to individual innovativeness. However, no support was found for the hypothesized moderating effect of hardiness. Furthermore, the organizational empowerment dimensions of dynamic structural framework and control of workplace decisions, as well as the hardiness dimension of commitment, were found to be important unique contributors to innovativeness. In addition, the hardiness dimension of challenge was found to be an important, unique contributor to idea generation. These findings lend support to past research linking innovativeness to organizational empowerment (Gebert, Boerner & Lanwehr, 2003) and psychological hardiness (Maddi, Harvey, Khoshaba, Lu, Persico & Brow, 2006).

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Finally, I would like to thank my friends and family for their support and encouragement.

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Introduction

There is general agreement in the literature that empowerment is imperative for competitive advantage in organizations (Matthews, Diaz & Cole, 2003; Gebert, Boerner & Lanwehr, 2003). Moving away from the command and control structure of the past is increasingly important for both companies and governments in an era of surging globalization and increased competition. In addition, the rise of more sophisticated technology requires an educated workforce that demands more control over their working lives. This study attempts to further the understanding of how organizational empowerment might be beneficial to an organization by looking at its relationship with innovativeness. Furthermore, this study also investigates the possible moderating factor of individual differences in psychological hardiness on the predicted link between perceived organizational empowerment and individual innovativeness.

Definition of Organizational Empowerment

Although definitions of empowerment within the business context abound (Robbins, 2002), they can generally be classified into two perspectives depending on the point of interest of the researchers, namely organizational and psychological empowerment. Organizational empowerment is defined as top-down devolution of power (Siegal & Gardner, 2000). It is, in essence, the belief by an organization that decisions are best made at the lowest possible level in the hierarchy (i.e., as close to the customer as possible), so employees are given the power, skills, resources and tools necessary to respond effectively to client needs. Consequently, managers in this environment are less able to control their subordinates, but must confine themselves to a

more supportive role in dealing with their direct reports.

Psychological empowerment, on the other hand, is defined as an internal process where "empowerment reflects a personal sense of control in the workplace" (Mishra & Spreitzer, 1998, p. 577). Rather than being a set of management practices, this view of empowerment is confined to the person (employee), and is less concerned with the context/environment. This signifies that empowerment is being achieved through psychological states, producing a perception of empowerment *within* the employee. The environment/context might influence this impression but it is essentially bottom-up processing originating internally.

One way to understand organizational and psychological empowerment is to consider the constructs as being under the influence of different actors. Organizational empowerment is dependent on actions made by management (i.e., devolution of power [Siegal & Gardner, 2000]), while psychological empowerment comes from beliefs and attitudes primarily stemming from the employee (i.e., the *feeling* of empowerment). Therefore, it has been suggested that not accounting for both concepts may be the reason why many empowerment programs fail (Quinn and Spreitzer, 1997). For instance, focusing solely on psychological empowerment without giving employees real power to make decisions (i.e., organizational empowerment) may only leave workers cynical about management intentions with the empowerment program.

Given that the two levels of empowerment emanate from disparate sources, they must also be handled differently when implemented. It can therefore be asserted that management should primarily focus their efforts on what they *can* influence -namely

organizational empowerment. The current study is primarily concerned with the environmental/contextual factors of empowerment as perceived by employees, and will therefore mainly discuss organizational empowerment.

Dimensions of Organizational Empowerment

According to Matthews et al. (2003), organizational empowerment includes three dimensions. These dimensions are control of workplace decisions, dynamic structural framework and fluidity in information sharing. *Control of workplace decisions* is defined as occurring when "employees are allowed input into all aspects of their professional career" (Matthews et al., p. 301). In essence, this means that employees are given control over decisions whenever possible, increasing their sphere of influence to a degree that makes them able to deal with any (or, at least most) challenges encountered on the job.

Research indicates that control of various responsibilities, such as scheduling, staff hiring, employee development, and goal setting, are crucial for employee sense of empowerment (Wilkinson, 1998). However, in certain highly structured organizations (e.g., the armed forces - a quintessential hierarchical organization), one might claim that the very nature of the business grants scant opportunity for employee empowerment. In such cases, the need for structure and control must be clearly defined and justified, so that employees know why they cannot have control or input. However, in doing such an exercise the organization might discover that there is room for more autonomy than originally presumed, and hence, increased opportunities for organizational empowerment. For instance, some of the policies or procedures obstructing empowerment may be unjustified, redundant or simply wrongheaded, and should therefore be rewritten, which

again will lead to more work autonomy.

Policies and procedures are important components of the second dimension of organizational empowerment, namely *dynamic structural framework*. This dimension alludes to an organizational structure that, through a clear set of modifiable guidelines, aids employee decision making, both procedurally and behaviorally, in a continuously changing work environment (Randolph, 1995).

It is imperative that employees know and understand the company vision, mission and strategic goals (Randolph, 1995). In addition, they must have a set of clear guidelines for decision making. It is, however, important that a company allows its employees to have a say in the formation of such guidelines. Indeed, all matters of the organization, including such high-level decisions as company goals and mission statements, should be conferred with the employees before implemented. This does not mean, however, that the mission statement changes with every new hire, but that employees are at least informed and, within reason, included in these decisions.

There are many ways that a company can create barriers to employee empowerment through the structural framework. Such barriers may include (a) unrealistic goal setting by executives, (b) authoritarian leadership style, (c) an over-emphasis on mistakes rather than learning, and (d) inaccessibility of upper management (Conger and Kanungo, 1988). Campbell and Martinko (1998) showed that employees display learned helplessness (i.e., failures attributed to unchangeable causes), in environments that are highly political, with large power distance and where negativity is prominent. On the other hand, low power distance, focus on learning, and positivity

allows an organization, together with the employees, to be flexible enough to alter itself with the changing business milieu (Campbell & Martinko, 1998). Furthermore, having a clear set of modifiable guidelines, in contrast with rigid top-down rules and regulations, allows an employee faced with an uncertain situation to draw on the overarching purpose of the company to make the best possible decision for the company in any specific instance. Thus, a company high in dynamic structural framework, have strong sense of purpose that guides how decisions are made, but employees also perceives that they have an impact on the determination of these decision-making guidelines (Matthews et. al, 2003)

To make a dynamic structural framework feasible, the third dimension of organizational empowerment, *fluidity in information sharing*, is of absolute significance. Fluidity in information sharing implies that "all information concerning the company is accessible to all individuals in the company" (Matthews et al., 2003, p. 301). This does not mean, that *all* institutional records (e.g., personnel records or performance appraisals) are available to *all* employees. What *is* shared, though, is information concerning the company *functioning*, so vital information is shared on a needs basis and that it is at hand whenever anyone at any level needs it. Information that should be shared in a communication network includes not only task-related information, but also employee ideas and grievances, location and availability of necessary resources and compensation policies.

Since information is power, there is a strong element of trust in companies with fluidity in information sharing (Randolph, 1995). If employees do not have access to

information, they are unable to act responsibly and are dependent on supervisors to make correct decisions. However, if pertinent information is fluid throughout the company employees are able to make good decisions on their own and trust is reinforced.

It is vital to realize that these three dimensions are not static and that they act in cohort, so that there is a synergistic effect of control of workplace decisions, dynamic structural framework and fluidity of information sharing on employee perceived organizational empowerment (Matthews et al., 2003). This synergy suggests that a company will be much better off focusing on all three aspects of organizational empowerment, rather than on only one or two of these when implementing an empowerment program.

Outcomes of Organizational Empowerment - Innovativeness

In a recent review, Arneson and Ekberg (2006) indicated that most of the existing empowerment research, and consequently most measures developed, has focused on psychological empowerment. However, companies interested in creating empowered employees are much more interested in creating an organizational environment conducive of empowerment, since this is an area where management has much more direct influence (Matthews et al., 2003).

Even though scant research has been done on perceived organizational empowerment as it is defined here, a relationship has been found with innovativeness (Gebert et al., 2003). Innovativeness can be defined as the intentional creation, introduction and application of new ideas within a work role, group or organization, in order to benefit role performance, the group or the organization (Janssen, 2000).

The construct follows a three-stage process, which employees may partake in to a more or less degree; (1) idea generation, (2) idea promotion, and (3) idea implementation (Scott & Bruce, 1994). The first stage of the innovation process, *idea generation*, is the identification that a problem exists and the bringing forth of ideas or solutions to solve the predicament. In a business setting this might entail the recognition that a business procedure is not very efficient and the generation of ideas to improve upon this procedure.

At the next stage, *idea promotion*, sponsorship for ideas are searched out, and attempts to create an alliance of supporters for the ideas are made. To follow the example above, at this stage the innovative individual would capture the attention, try to influence and, if successful, get the acquiescence of people that can aid in making the idea come to fruition.

The last stage of the innovation process, *idea implementation*, entails the completion of the idea by making a prototype or model that can be physically or mentally experienced, and later be put to profitable use or institutionalized by the organization. This could, for example, be the creation of a new or improved product that can be launched by the company.

Given that innovation processes are often characterized by discontinuous activity (Kanter, 1988), employees might be expected to partake in any combination of these behaviors at any point in time (Scott & Bruce, 1994). It has been found that the three stages have very high intercorrelations ($r > .70$), and can, hence, be conceived to combine additively to create a very reliable overall scale of innovativeness (Janssen, 2000;

Dorenbosch, van Engen & Verhagen, 2005; Ramamoorthy, Flood, Slattery, & Sardessai, 2005).

Important Facets of Innovation

Drucker (2002) held that, contrary to popular beliefs, most innovation is hard work that needs to be focused and purposeful, rather than "eureka" moments where the work to implement the idea flows easily from the brilliant insight of the innovator. Without diligence, persistence and commitment, talent, ingenuity and knowledge matter very little (Drucker, 2002). Despite the considerable effort and resources needed for successful innovation, companies are reliant on it for growth (e.g., increased revenue, market share etc.).

It is important to make a distinction between creativity and innovativeness. Whereas creativity is regarded as the simple generation and articulation of ideas, innovativeness incorporates promotion and implementation of creative ideas as well. It is, hence, a broader construct requiring multiple talents, like imagination, persistence and social skills (Shalley & Gibson, 2004).

Another intriguing aspect of innovation is the "slipperiness" of the concept. Since the usefulness of an innovation is in the "eye of the beholder", there will never be perfect agreement among people about what is or is not innovative. It is analogous to the question of "what is art?" - a question that invariably receives a wide variety of responses. For instance, in a business setting, a product might be regarded as innovative by company management, but consumers do not and decline the new product offering.

This slipperiness in regards to innovation can also explain findings of only

moderate relationships between supervisor ratings of employee innovativeness and invention disclosures filed by employees in a R&D department (Scott & Bruce, 1994), as well as between supervisor ratings and employee self-ratings of innovativeness (Carmeli, Meitar & Weisberg, 2006). On a positive note, these findings does support the notion that there is at least agreement, to a certain extent, between different measures of innovativeness.

Previous Findings: Organizational Empowerment and Innovativeness

Gebert et al., (2003) investigated organizational empowerment in relation to organization-wide innovativeness. The purpose of their study was to show that there is a relationship between the three dimensions of organizational empowerment and innovativeness. It was contended that control of workplace decisions is only one dimension of a larger construct, and is not, in itself, enough to increase innovativeness. Rather, at some point negative secondary effects override the positive effects of increased control. The relationship between control of workplace decisions and innovativeness would, hence, be curvilinear (displayed graphically as an "inverted U") instead of the linear relationship previously assumed.

According to the authors, simply giving more control of workplace decisions to employees, without any other action on part of management, will generally allow for the creation of more ideas. However, only a fraction of these will be useful for the organization. Further, as a matter of human nature, most employees (if not everyone) will promote their own ideas rather than others', hoping to get their own initiatives implemented. This process hardens attitudes and more time is spent bickering, rather

than finding workable solutions. Without clear organizational goals and objectives, conflicts abound between various factions trumping their own initiatives. In sum, although more initiatives are created through increased control, unclear selection criteria (due to lack of clear objectives), leads to an increasing amount of unresolved conflicts, ultimately leading to disappointment on the part of the "losers". This, again, leads to falling implementation rates and less quality of initiatives, which in the end, lessens organizational innovation.

The negative secondary effects mentioned by Gebert et al. (2003) can be abated if the organization displays the two additional dimensions of organizational empowerment. Hence, if a company, in addition to giving control of workplace decisions, also is perceived to show fluidity in information sharing and a dynamic structural framework, the relationship between these three dimensions of organizational empowerment and innovativeness will not show curvilinearity, but be linear throughout.

The main hypothesis of Gebert et al. (2003) was that control of workplace decisions would show a curvilinear ("inverted U") relationship with innovativeness (i.e., innovativeness would decline when a certain level of employee control was reached). However, if dynamic structural framework and fluidity in information sharing also exist, the relationship remains linear throughout.

Organizational empowerment was measured by 15 items reflecting control of workplace decisions (e.g., "the success of this company is attributed mainly to the ability to get things moving and to bring about change actively"), sharing of information (e.g., "the top-management in this organization always succeed in giving employees a clear

basic orientation"), and dynamic structural framework (e.g., "in our organization, everyone pulls together. There is no quarreling that could seriously endanger unity"). Innovativeness was measured at the organizational level using seven questions about comparisons with the competition, the company's own past, and the discrepancy between innovativeness attained and perceived potential. Hence, the above mentioned dimensions of innovativeness (i.e., idea generation, promotion and implementation) were only *indirectly* measured in the Gebert et al. (2003) study. It is important to note that, due to the investigators' interest in looking at innovation at the organizational level, only one executive from each participating company was approached, thereby limiting the information gained from each company. However, they did attain a cross-section of businesses from both service and manufacturing sectors.

Essentially, the study confirmed the main hypothesis that the relationship between control of workplace decisions and innovativeness would be curvilinear, but that it turned linear when there was perceived to be a dynamic structural framework and fluidity in information sharing at the company. Hence, the evidence indicates that simply giving control over workplace decisions is not enough, and that a dynamic structure and accessible information are necessary components in successfully creating an environment that encourage innovation.

This study gives credence to the contention that a company needs *all* three dimensions of organizational empowerment to encourage innovativeness at the organizational level. The results also indicated that this was the case across industries, and not specific to any one sector (e.g., results were similar for information technology

and motor vehicles manufacturing).

One limitation to this study was the fact that only one executive was asked to give his or her view of the level of innovativeness of the whole company. This is, of course, an economical method to gauge innovativeness across organizations and industries. Although interesting, the view of this one individual might not necessarily reflect the views of the whole company. It is therefore imperative to look at the level of the individual, to get a more comprehensive view of individual contributions. Further, a company is fundamentally dependent on all its individual members to conjure up, carry, change and react to ideas (Van de Ven, 1986). Therefore, the study of innovativeness at the level of the individual, rather than at the organization, is crucial to understand how innovation occurs in organizations and to be able to explain individual differences in innovative behavior (Aamo & Kolvereid, 2005). Until recently, though, there has been little focus on innovation at the individual level (West and Farr, 1989; Aamo and Kolvereid, 2005).

The Gebert et al. (2003) study showed a lack of any attempt to explain individual differences. To be more specific, it is very possible that certain people are more innovative in an empowered environment than others. Some employees might accept the challenge of increased responsibilities and authority more readily than others, and they might consequently show more innovativeness on the job. We basically do not know from the Gebert et al. findings how each employee in the companies studied respond to organizational empowerment, even though it can be concluded that organizational empowerment is *overall* good for organizational innovativeness.

Continuing the investigation into the link between organizational empowerment and innovativeness, the present study attempts to look at innovation at the individual level, rather than organization-wide, since innovation ultimately depends on individual creativity and effort. Furthermore, the current research will try to explain individual differences in terms of the personality construct of psychological hardiness. A further explanation follows.

Hardiness

Psychological hardiness is defined as the "existential courage and motivation to cope effectively with stressful circumstances" (Maddi & Harvey, 2006, p. 576). In other words, hardiness implies that people differ in how they cope with life situations (including work) that are experienced as taxing or demanding, meaning that some individuals perform better or more adaptively under onerous conditions than others.

Maddi et al. (2006) found a positive relationship between hardiness and innovativeness and innovative job performance. This finding indicated that people scoring higher on psychological hardiness were more successful on a common task used to measure innovative behavior, and performed better on job functions widely regarded as requiring some measure of innovativeness (e.g., finding and retaining consulting clients). It is therefore not unreasonable to suggest that psychological hardiness can explain, at least to a certain extent, individual differences in innovativeness stemming from organizational empowerment.

Hardiness has three components: commitment, control, and challenge (Maddi, 2002). *Commitment* is the involvement or concern with people and events. So, instead of

escaping into isolation when faced with a difficult situation, committed individuals stay engaged with the people and events around them. Hence, a hardy person stays connected with his own life and do not retract into solitude when challenges awaits. It is logical to expect that an individual high in commitment will embrace the opportunities offered in an empowered climate, since s/he would have no qualms about, for instance, seeking help or assistance when problems arise on the job, or giving the coworkers or supervisor honest and useful feedback when needed. Also, such a person is probably more likely to point out problems and get support for solutions (i.e., being more innovative).

Control is the belief that effort leads to influence (Maddi, 2002). An individual high in control believes that people and situations can be influenced, as opposed to not having control over people and events and being at their mercy. However, it is important to realize that such a person also understands that some situations are simply out of ones control and must be accepted and dealt with appropriately. To elucidate, an employee facing a mass lay-off might come to the conclusion that this is irreversible (meaning the company cannot afford to keep staff at the current level), so instead of trying to make management change its mind, the employee high in control spends time and effort job-seeking or reeducating herself. A person high in control would probably welcome increased control of workplace decisions in an empowered environment and would also be likely to use the authority to improve the work situation by coming up with better processes or products.

Lastly, *challenge* is belief in the contention that change is positive and an opportunity to learn new things rather than a possible threat and something to be avoided

(Maddi, 2002). Accordingly, an individual strong in challenge regard change as the norm and revere the chance to continue to evolve and advance through adverse, as well as favorable circumstances. It is not hard to imagine someone high in the mind-set of challenge to regard organizational empowerment as something to be wholly embraced, and who thrives in the climate created by increased responsibility and decision-making power. Further, it is quite reasonable to expect such a person to come up with novel ideas and take them through the stages of innovation.

To sum up, commitment, control and challenge are the three elements necessary to face onerous circumstances with courage, and makes up the construct of psychological hardiness. Without sounding too presumptuous, it is quite difficult to see anyone lacking in the attitudes and beliefs making up hardiness flourishing in a company that embraces organizational empowerment. More specifically, it is hard to see a person who retreats into isolation and powerlessness under stress, and who deems change to be a threat, as someone who would prosper under conditions of high sphere of control, clear and ever-changing goals and guidelines, and where continuous interactions with bosses and peers is the norm and expected.

The Current Study

As mentioned above, a relationship has already been found between hardiness and innovativeness, but no research has looked for a direct link between individual innovative behavior at work, as defined by Janssen (2000), and psychological hardiness. Hence, it would therefore be of interest to see whether the indicative results by Maddi et al. (2006) would generalize to individual innovativeness in organizations.

Furthermore, there is little research explaining individual differences in innovativeness in an empowered environment. The lack of an explaining factor indicating why increasing perceived organizational empowerment leads to higher innovation in organizations, begs for speculation as to whether some people thrive in such an environment more than others. For businesses, not knowing this leads to uncertainty about the likelihood of successful implementation of empowerment programs, and probably to less executive buy-in for such programs in the first place.

The evidence mentioned thus far suggests that perceived organizational empowerment is related to innovativeness and that innovativeness is linked to psychological hardiness. What has not been empirically established so far, even though it is clearly possible to make the argument, is that psychological hardiness acts as a moderator between organizational empowerment and innovative behavior. Hence, it is possible that hardiness is an explaining factor, accounting for individual differences in innovativeness in response to perceived organizational empowerment (i.e. hardiness explains who will respond with more innovative behavior when faced with increased control and access to information within a framework that is clear and modifiable).

In line with this reasoning, the purpose of this study is to show that organizational empowerment is positively related to individual innovativeness, that hardiness is positively related to innovativeness, and that psychological hardiness functions as a moderating factor between organizational empowerment and innovativeness.

Hypotheses

1. The three dimensions of organizational empowerment (i.e., control of workplace

decisions, dynamic structural framework, and fluidity in information sharing) are positively related to the three stages of individual innovativeness (i.e. idea generation, promotion, and implementation), so increased perceived organizational empowerment leads to higher individual innovativeness.

2. The three dimensions of psychological hardiness (i.e., commitment, control and challenge) are positively related to the three stages of individual innovativeness (i.e. idea generation, promotion, and implementation), so more psychological hardiness leads to higher individual innovativeness.
3. The three dimensions of psychological hardiness will act as moderators between the three dimensions of perceived organizational empowerment and the three stages of individual innovativeness

Method

Participants

As indicated in Table 1, the sample of participants were ostensibly varied with age ranging from 18 to 55 years (M = 27.63), tenure at the current employer ranging from 1 month to 20 years (M = 3.17), and participants typically working on average between 3 and 80 hours per week (M = 33.68). Furthermore, the sample were also varied in terms of gender (with 62% female and 38 % male), education (with about half indicating high school as the highest degree attained), and organizational size (with about half saying they had working experience in organizations with less than 100 employees). The participants also worked in many different industries (information and retail industries being the most common) and in different types of jobs (professional/ technical and administrative support being the most common).

Measures

Organizational empowerment. Defined as top-down devolution of power (Siegal & Gardner, 2000), organizational empowerment was measured using the Organizational Empowerment Scale (Matthews, Diaz & Cole, 2003). Within this construct, three dimensions were measured using 19 items: (a) control of workplace decisions (e.g., "Employees have a say in setting their own production standards"); (b) dynamic structural framework (e.g., "Employees have a say in changing company policies"); and (c) fluidity in information sharing (e.g., "Employees are provided with financial records of the company"). Participants were asked to "indicate the extent to which your current/most recent organization demonstrates the following." Being the most frequently

Table 1. *Descriptive statistics of demographic variables (N = 255)*

Variables	MEAN	SD	Range	Valid N
Age	27.63	7.39	18-55	251
Tenure	3.17	3.24	.10 – 20	249
Hours worked per week	33.68	12.58	3 – 80	252
	N	-	-	-
Gender				
Female	158	62%		
Male	97	38%		
Education				
High School	127	51%		
Bachelor	82	33%		
Master's	37	15%		
Doctorate	3	1%		
Size of Organization				
<20	65	26%		
21-99	65	26%		
100-499	33	13%		
500-2,499	32	13%		
2,500-10,000	20	8%		
>10,000	34	14%		
Industry Type				
Information	41	17%		
Retail	42	17%		
Education & Health	33	14%		
Leisure & Hospitality	33	13%		
Financial Services	28	12%		
Manufacturing	22	9%		
Government	15	6%		
Professional Business Services	12	5%		
Other	19	7%		
Job Type				
Professional, Specialty & Technical	73	30%		
Administrative Support	55	22%		
Service Occupations	46	19%		
Executive, Administrative & Managerial	42	17%		
Sales	23	10%		
Other	6	2%		

used scale in the social sciences (Spector, 1992), a four point Likert-type scale was used, with answers ranging from (1) *Never* to (4) *Always*, where a high score indicates high organizational empowerment. The scale has previously been found to be reliable with Cronbach's alpha ranging between .80 and .90 for each of the three dimensions (Matthews et al., 2003).

Psychological hardiness. Psychological hardiness, the "existential courage and motivation to cope effectively with stressful circumstances" (Maddi et al., 2006, p. 576) , was measured using 16 items from the Personal Views Survey III-R (Maddi et al., 2006). The three dimensions of psychological hardiness: (a) commitment (e.g., "I often wake up eager to take up life wherever it left off"); (b) control (e.g., "When I make plans, I am certain to make them work"); and (c) challenge (e.g., "changes in routine provoke me to learn"), were measured using a four point Likert-type scale, with answers ranging form (1) *Not at all true* to (4) *Very True*, where a high score indicates high psychological hardiness. Participants were asked to "answer each statement by circling the number that is most true to your current views and life situation." The scale has previously been found to be reliable, with an overall Cronbach's alpha of .80 (Maddi et al, 2006).

Individual innovativeness. Individual innovativeness is the intentional creation, introduction and application of new ideas within a work role, group or organization, in order to benefit role performance, the group or the organization (Janssen, 2000). Innovativeness was assessed using 9 items. The three dimensions of innovativeness: (a) idea generation (e.g., "Creating new ideas for difficult issues"); (b) idea promotion (e.g., "Mobilizing support for innovative ideas"); and (c) idea implementation (e.g.,

"transforming innovative ideas into useful applications"), was measured using a four point Likert-type scale, with answers ranging from (1) *Never* to (4) *Always*, where a high score indicates high innovativeness. Participants were asked to "rate yourself on *the extent* to which you engage(d) in the behaviors below in your current/most recent organization." The overall scale has been found to combine additively to create a very reliable overall scale of self-rated innovativeness with a Cronbach's alpha of .95 (Janssen, 2000).

Procedure

Recruited from courses in the psychology and business departments, 266 graduate and undergraduate students from San Jose State University and University of Phoenix participated in this study. A convenience sampling technique (i.e., participants were selected for accessibility and convenience) was used to recruit the student participants in the hopes of attaining a varied sample in terms of gender, age, and employment. Participation was voluntary and the subjects were not compensated for their participation. The subjects were assured of confidentiality, and only the consent form included their name (see Appendix A). A paper and pencil survey (see Appendix A) was distributed to the participants after agreement to access the students was attained from each course lecturer.

Results

Prior to analysis, each variable was examined for accuracy of data entry, missing values and outliers for each of the 266 participants. Eleven participants were left out of the analysis due to lack of responses on multiple demographic items (i.e., tenure, hours worked, job type and industry), since there was no assurance that the participant had sufficient work experience to justify inclusion in the analysis. Other missing data were random in nature, and were replaced by the subject mean on the particular dimension in question. No extreme cases of outliers were found in the sample. Normality and linearity were found to be acceptable. With 11 participants excluded because of missing data, 255 participants remained for further analysis.

The means, standard deviations and reliabilities of all study variables are listed in Table 2. It may be interesting to note that two dimensions of hardiness (i.e., control and challenge) had very high average scores (M = 3.23 and M = 3.10, respectively). This indicates that the participants see themselves as high in control of their personal lives and that they see change as positive and an opportunity to learn (which may not be surprising in a group of undergraduate and, not least, graduate students studying Business and Psychology). The rest of the variable means were, as expected, between M = 2.00 and M = 3.00 (out of a possible range of 1.00 to 4.00).

Cronbach's alpha is a measure of internal consistency of a scale, which is a function of the number of items and the intercorrelation of each item on a scale (Spector, 1992). Cronbach's alpha in excess of .70 is considered adequate reliability (Nunnally, 1978). Looking at Table 2, the Cronbach's alpha for the dimensions of organizational

Table 2. *Scale descriptive statistics and correlations*

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1. Dynamic Structural Framework[a]	2.61	.46	(.65)								
2. Control of Workplace Decisions[a]	2.18	.53	.49***	(.71)							
3. Fluidity in Information Sharing[a]	2.34	.54	.50***	.53***	(.50)						
4. Control[b]	3.23	.44	.21**	.11	.05	(.50)					
5. Challenge[b]	3.10	.42	.17**	.04	.07	.30***	(.54)				
6. Commitment[b]	2.87	.44	.17**	.17**	.10	.44***	.37***	(.59)			
7. Idea Generation[c]	2.68	.71	.34***	.30***	.17**	.15*	.27***	.32***	(.83)		
8. Idea Promotion[c]	2.54	.75	.34***	.38***	.24**	.14*	.14*	.29***	.67***	(.84)	
9. Idea Iplementation[c]	2.51	.75	.36***	.39***	.25**	.19**	.17**	.30***	.63***	.79***	(.88)

Note. Statistic in parenthesis is Cronbach's alpha reliability coefficient

Listwise N = 255.

[a] Organizational Empowerment

[b] Psychological Hardiness

[c] Innovativeness

*$p < .05$. **$p < .01$. ***$p < .001$.

empowerment indicates that the scales for dynamic structural framework (Cronbach's alpha = .65) and fluidity in information sharing (Cronbach's alpha = .50) have inadequate reliability. As for the dimensions of hardiness, control (Cronbach's alpha = .50), challenge (Cronbach's alpha = . 54), and commitment (Cronbach's alpha = .59), all have inadequate reliability. All the dimensions of innovativeness were found to have adequate reliability.

Pearson correlation coefficients for dimensions within and between constructs are also presented in Table 2. As expected, all the dimensions of each construct were significantly related to each other. However, they differed in the degree of interrelatedness. The dimensions of organizational empowerment were significantly ($p < .001$) positively related between $r = .49$ and $r = .53$. The hardiness dimensions of control, challenge and commitment had somewhat low, albeit significant ($p < .001$) positive relationships ($r = .30$ to $r = .44$), which indicates that the dimensions are not as related to each other as should be expected for dimensions of a construct (Spector, 1992). The dimensions of innovativeness were all highly, significantly ($p < .001$) positively related ($r = .63$ to $r = .79$).

Overall, all the predictor variables (i.e., organizational empowerment and hardiness dimensions) were significantly related to the criterion variables (i.e., innovativeness dimensions). However, for the organizational empowerment dimensions, dynamic structural framework ($r = .34$ to $r = .36$) and control of workplace decisions ($r = .30$ to $r = .39$), were more positively related to the innovativeness dimensions, than were fluidity in information sharing ($r = .17$ to $r = .25$). As for the hardiness dimensions,

commitment (r = .29 to r = .32) were more positively related to the criterion variables than challenge (r = .14 to r = .27) and control (r = .14 to r = .19).

Hypothesis 1

To test the first hypothesis, that the three dimensions of organizational empowerment (dynamic structural framework, control of workplace decisions, and fluidity in information sharing) are positively related to the three stages of individual innovativeness (idea generation, promotion and implementation), a canonical correlation analysis was conducted to assess the overall relationship and contributions of each dimension to this relationship. The overall relationship between the two sets of variables was significant, $\lambda = .78$, $F(9,606) = 7.22$, $p < .001$, with 17 % of variance of the innovativeness dimensions explained by the organizational empowerment dimensions. Dimension reduction analysis indicated that only one of the three canonical variates was significant ($R = .46$, $R^2 = .21$, $p<.001$) indicating that only one variate accounted for the relationship between the two sets of variables.

Standardized and structural coefficients for this variate are listed in Table 3. With a recommended cutoff correlation of .3 (Lambert & Durand, 1975), control of workplace decisions (.65 and .88) and dynamic structural framework (.56 and .84) had both adequate standardized and structural correlations in the positive direction with the variate, while fluidity in information sharing (.07 and .56) had only an adequate structural correlation with the variate. This can be explained by the high correlation between this dimension and dynamic structural framework ($r = .50$, $p < .001$), as well as with control of workplace decisions ($r = .53$, $p < .001$).

Table 3. *Canonical analysis of organizational empowerment and innovativeness*

Variable	Standardized coefficients Canonical Variate 1	Structural Coefficients Canonical Variate 1
Organizational Empowerment		
Dynamic Structural Framework	**-.56**	**-.84**
Control of Workplace Decisions	**-.65**	**-.88**
Fluidity in Information Sharing	.07	**-.56**
Innovativeness		
Idea Generation	-.26	**-.81**
Idea Promotion	**-.34**	**-.92**
Idea Implementation	**-.51**	**-.94**

Note. Canonical correlation = .46, $F(9,606) = 7.22$, $p < .001$
Coefficients in bold are above the minimum loading value of r = .3 as recommended by Lambert & Durand (1975)

As for the innovativeness dimensions, idea implementation (.51 and .94) and idea promotion (.34 and .92) had both adequate standardized and structural correlations in the positive direction with the variate, while idea generation (.26 and .81) only had an adequate structural correlation with the variate. This indicates that increased control of workplace decisions and a more dynamic structural framework in organizations are associated with more idea implementation and idea promotion among employees. The two variables only partly related to the variate (i.e. fluidity in information sharing and idea generation) are less important in this regard.

In order to further understand the nature of the relationship between the predictor and criterion variables, a standard multiple regression analysis was performed for each of the innovativeness dimensions (idea generation, promotion, and implementation), with the three organizational empowerment dimensions (dynamic structural framework, control of workplace decisions and fluidity in information sharing) being the predictor variables in each of the three separate analyses. Table 4 shows the regression analysis for each of the innovativeness dimensions. For idea generation, a significant relationship was found; $R = .38$, $R^2 = .14$, $R^2_{adj} = .13$, $F(3, 251) = 13.83$ $p < .001$, where the three dimensions of organizational empowerment explained 14% of variance of idea generation. However, only dynamic structural framework ($\beta = .27$, $p < .01$) and control of workplace decisions ($\beta = .21$, $p < 01$) significantly predict idea generation, explaining 5 % and 3 % of unique variance respectively. Fluidity in information sharing failed to show any significant, unique, predictive ability ($\beta = .08$). Hence, more dynamic structural framework and increased control of workplace decisions are uniquely related

Table 4. *Standard regression analysis for organizational empowerment variables predicting innovativeness*

Variable	β[a]	sr²[b]	R	R²	R²adj
	Dependent Variable: Idea Generation				
Dynamic Structural Framework	.27**	.05			
Control of Workplace Decisions	.21*	.03			
Fluidity in Information Sharing	.08	.00			
			.38**	.14	.13
	Dependent Variable: Idea Promotion				
Dynamic Structural Framework	.21**	.03			
Control of Workplace Decisions	.28**	.05			
Fluidity in Information Sharing	-.02	.00			
			.42**	.18	.17
	Dependent Variable: Idea Implementation				
Dynamic Structural Framework	.23**	.04			
Control of Workplace Decisions	.28**	.05			
Fluidity in Information Sharing	-.01	.00			
			.43**	.19	.18

[a] Standardized regression Coefficient

[b] Squared semi-partial correlation coefficient indicating unique variance contribution of variable

* $p < .05$; ** $p < .01$

to more idea generation among employees.

For idea promotion, a significant relationship was found; $R = .42$, $R^2 = .18$, $R^2_{adj} = .17$, $F(3, 251) = 17.91$, $p < .001$, where the three dimensions of organizational empowerment explained 18% of variance of idea promotion. Again, only dynamic structural framework ($\beta = .21$, $p < .01$) and control of workplace decisions ($\beta = .28$, $p < 01$) significantly predict idea promotion, explaining 3 % and 5 % of variance respectively, while fluidity in information sharing did not uniquely explain any variance of idea promotion ($\beta = -.02$). Hence, more dynamic structural framework and increased control of workplace decisions are uniquely related to more idea promotion efforts among employees.

For idea implementation, a significant relationship was found; $R = .43$, $R^2 = .19$, $R^2_{adj} = .18$, $F(3, 251) = 19.87$ $p < .001$, where the three dimensions of organizational empowerment explained 19% of variance on idea implementation. As in the two previous analyses, only dynamic structural framework ($\beta = .23$, $p < .01$) and control of workplace decisions ($\beta = .28$, $p < 01$) significantly predict idea implementation, explaining 4 % and 5 % of variance respectively. Fluidity in information sharing failed to show any significant, unique predictive ability on idea implementation ($\beta = -.01$). Hence, more dynamic structural framework and increased control of workplace decisions are uniquely related to more idea implementation by employees.

In sum, the organizational empowerment dimensions were all significantly related to all the innovativeness dimensions. Additionally, dynamic structural framework and control of workplace decisions had a significant, unique relationship with all three

innovativeness dimensions, while fluidity in information sharing did not.

Hypothesis 2

To test the second hypothesis, that the three dimensions of hardiness (control, challenge, and commitment) are positively related to the three stages of individual innovativeness (idea generation, promotion and implementation), a canonical correlation analysis was conducted to assess the overall relationship and contributions of each dimension to this relationship. The overall relationship between the sets of variables was significant, $\lambda = .84$, $F(9,606) = 5.04$, $p < .001$, with 10 % of variance of the innovativeness dimensions explained by the hardiness dimensions. Dimension reduction analysis indicated that only one of the three canonical variates was significant ($R = .37$, $R^2 = .14$, $p < .001$), indicating that only one variate accounted for the relationship between the sets of variables. Standardized and structural coefficients for this variate are listed in Table 5. With a recommended cutoff correlation of .3, commitment (.76 and .92) and challenge (.42 and .71) had adequate standardized and structural positive correlations with the variate, while control (.01 and .47) had only adequate structural correlation in the positive direction. This can be explained by it's intercorrelation with commitment ($r = .44$, $p < .001$) and challenge ($r = .30$, $p < .001$). As for the innovativeness dimensions, idea generation (.77 and .96) and idea implementation (.39 and .82) had adequate standardized and structural positive correlations with the variate, while idea promotion (.08 and .74) had only adequate structural correlation in the positive direction. This can be explained by it's intercorrelation with idea generation ($r = .67$, $p < .001$) and idea implementation (.79, $p < .001$). Overall, these findings indicate that the

Table 5. *Canonical analysis of psychological hardiness and innovativeness*

Variable	Standardized coefficients Canonical Variate 1	Structural Coefficients Canonical Variate 1
Psychological Hardiness		
Control	-.01	**-.47**
Challenge	**-.42**	**-.71**
Commitment	**-.76**	**-.92**
Innovativeness		
Idea Generation	**-.77**	**-.96**
Idea Promotion	.08	**-.74**
Idea Implementation	**-.39**	**-.82**

Note. Canonical correlation = .37, $F(9,606) = 5.04$, $p < .001$
Coefficients in bold are above the minimum loading value of .3 as recommended by Lambert & Durand (1975)

more of the hardiness dimensions of commitment and challenge a person possess, the more idea generation and idea implementation the person will display. The two variables that were only partly related to the variate (i.e., control and idea promotion) are less important in this regard.

In order to further understand the nature of the relationship between the predictor and criterion variables, a standard multiple regression analysis was performed for each of the innovativeness dimensions (i.e., idea generation, promotion, and implementation), with the three hardiness dimensions (i.e., control, challenge and commitment) being the independent variables in each of the three separate analyses. Table 6 shows the regression analysis for each of the innovativeness dimensions. For idea generation, a significant relationship was found; $R = .36$, $R^2 = .13$, $R^2_{adj} = .12$, $F(3, 251) = 12.47$ $p < .001$, where the three hardiness dimensions explained 13% of variance. Only challenge ($\beta = .18$, $p < .01$) and commitment ($\beta = .26$, $p < 01$) significantly predict idea generation, explaining 3 % and 5 % of variance respectively. Control ($\beta = -.02$) failed to show significant unique predictive power on idea generation. Hence, the more a person possess the challenge and commitment facets of hardiness, the more ideas will be generated by this person in a working environment.

For idea promotion, a significant relationship was found; $R = .29$, $R^2 = .08$, $R^2_{adj} = .07$, $F(3, 251) = 7.55$, $p < .001$, where the three hardiness dimensions explained 8 % of variance in idea promotion. Only commitment ($\beta = .22$, $p < .01$) significantly predict idea promotion, explaining 5 % of variance, while control ($\beta = .01$) and challenge ($\beta = .03$) failed to show any unique explanation of variance of idea promotion. Hence, the

Table 6. *Standard regression analysis for psychological hardiness variables predicting innovativeness*

Variable	β[a]	sr²[b]	R	R^2	R^2adj
	Dependent Variable: Idea Generation				
Control	-.02	.00			
Challenge	.18**	.03			
Commitment	.26**	.05			
			.36**	.13	.12
	Dependent Variable: Idea Promotion				
Control	.01	.00			
Challenge	.03	.00			
Commitment	.22**	.05			
			.29**	.08	.07
	Dependent Variable: Idea Implementation				
Control	.06	.00			
Challenge	.05	.00			
Commitment	.26**	.05			
			.31**	.10	.09

[a] Standardized regression Coefficient

[b] Squared semi-partial correlation coefficient indicating unique variance contribution of variable

* $p < .05$. ** $p < .01$.

more a person possess the commitment facet of hardiness, the more this person will engage in idea promotion in a working environment.

For idea implementation, a significant relationship was found; $R = .31$, $R^2 = .10$, $R^2_{adj} = .09$, $F(3, 251) = 9.12$ $p < .001$, where the three hardiness dimensions explained 10% of variance in idea implementation. Only commitment ($\beta = .26$, $p < .01$) significantly predict idea implementation, explaining 5 % of variance, while control ($\beta = .06$) and challenge ($\beta = .05$) failed to show any unique contribution to idea implementation. Hence, the more a person possess the commitment facet of hardiness, the more this person will engage in idea implementation at work.

In sum, the psychological hardiness dimensions were all significantly related to all the innovativeness dimensions. Additionally, commitment had a significant, unique relationship with all three innovativeness dimensions, while challenge had a significant, unique relationship with idea generation, but not the two other innovativeness dimensions. Control had no unique relationship with any of the innovativeness dimensions.

Hypothesis 3

To test the third hypothesis, that the three dimensions of psychological hardiness act as moderators between the three dimensions of perceived organizational empowerment and the three stages of individual innovativeness, three omnibus hierarchical regressions were computed, each of which involved a different innovativeness dimension as the criterion variable and the significant contributors (found in the standard multiple regressions) of the organizational empowerment and hardiness

dimensions as predictors. Hence, for idea generation, the organizational empowerment dimension of fluidity in information sharing and the hardiness dimension of control were not included in the analysis. For idea promotion and idea implementation, fluidity in information sharing, and control and commitment were excluded from the analysis.

As shown in Table 7, the regressions yielded no significant interactions between the relevant organizational empowerment and hardiness dimensions. Thus, although dimensions of hardiness are associated with more innovativeness, as indicated by the standard regression analyses, hardiness does not appear to have a significant moderator effect. This can, in part, be explained by the lack of relationship between the relevant dimensions of organizational empowerment and hardiness. For instance, although commitment were significantly positively related with both dynamic structural framework ($r = .17$, $p < .01$) and control of workplace decisions ($r < .17$, $p < .01$), both correlations are quite low. Similarly, challenge does not seem to have much relationship with neither dynamic structural framework ($r = .17$, $p < .01$), nor control of workplace decisions ($r = .17$, ns).

Unique Contribution of Predictors on Innovativeness

Because of the lack of any moderator effect of psychological hardiness on organizational empowerment and innovativeness, a standard multiple regression analysis was performed to flesh out the unique contribution of the dimensions of both organizational empowerment and hardiness on each dimension of innovativeness.

Table 8 shows the regression analysis for each of the innovativeness dimensions with all dimensions of organizational empowerment and hardiness as predictor variables.

Table 7. *Interaction analysis for variables predicting innovativeness*

Variable	β[a]	sr²[b]	R	R^2	R^2adj	ΔR^2
	Dependent Variable: Idea Generation					
Step 1						
Dynamic Structural Framework	.19**	.03				
Control of Workplace Decisions	.17**	.02				
Challenge	.16**	.03				
Commitment	.20*	.02				
			.47**	.22	.21	
Step 2						
Dynamic Structural Framework x Challenge	-.92	.00				
Dynamic Structural Framework x Commitment	.64	.00				
Control of Workplace Decisions x Challenge	-.17	.00				
Control of Workplace Decisions x Commitment	-.27	.00				
			.48**	.23	.21	.01
	Dependent Variable: Idea Promotion					
Step 1						
Dynamic Structural Framework	.18**	.05				
Control of Workplace Decisions	.25**	.02				
Commitment	.21**	.04				
			.47**	.21	.21	
Step 2						
Dynamic Structural Framework x Commitment	.50	.00				
Control of Workplace Decisions x Commitment	-.90	.01				
			.48**	.22	.21	.01
	Dependent Variable: Idea Implementation					
Step 1						
Dynamic Structural Framework	.18**	.05				
Control of Workplace Decisions	.25**	.02				
Commitment	.21**	.04				
			.49**	.24	.23	
Step 2						
Dynamic Structural Framework x Commitment	.50	.00				
Control of Workplace Decisions x Commitment	-.90	.01				
			.49**	.24	.22	.00

Note. * $p < .05$. ** $p < .01$.

Table 8. *Standard regression analysis for organizational empowerment and hardiness variables predicting innovativeness*

Variable	β[a]	sr²[b]	R	R²	R²adj
	Dependent Variable: Idea Generation				
Dynamic Structural Framework	.22**	.03			
Control of Workplace Decisions	.20**	.03			
Fluidity in Information Sharing	-.08	.00			
Control	-.06	.00			
Challenge	.17**	.02			
Commitment	.22**	.04			
			.48**	.23	.21
	Dependent Variable: Idea Promotion				
Dynamic Structural Framework	.19**	.02			
Control of Workplace Decisions	.26**	.04			
Fluidity in Information Sharing	-.01	.00			
Control	-.03	.00			
Challenge	.03	.00			
Commitment	.21**	.03			
			.47**	.22	.20
	Dependent Variable: Idea Implementation				
Dynamic Structural Framework	.19**	.02			
Control of Workplace Decisions	.26**	.04			
Fluidity in Information Sharing	.00	.00			
Control	.02	.00			
Challenge	.04	.00			
Commitment	.21**	.03			
			.49**	.24	.22

[a] Standardized regression Coefficient

[b] Squared semi-partial correlation coefficient indicating unique variance contribution of variable

* $p < .05$. ** $p < .01$.

For idea generation, a significant relationship was found; $R = .48$, $R^2 = .23$, $R^2_{adj} = .21$, $F (6, 248) = 12.24$ $p < .001$. Overall, the six predictors explained 23 % of variance of idea generation. As expected, dynamic structural framework ($\beta = .22$, $p < .01$), control of workplace decisions ($\beta = .20$, $p < 01$), challenge ($\beta = .17$, $p < .01$) and control ($\beta = .22$, $p < .01$) significantly predicted idea generation, explaining 3 %, 3 %, 2 % and 4 % of unique variance respectively. Also as expected, fluidity in information sharing ($\beta = -.08$) and control ($\beta = -.06$) failed to show any significant, unique, predictive power. Hence, the regression analysis indicates that each of the expected predictors significantly and uniquely predict the criterion.

For idea promotion, a significant overall relationship was found; $R = .47$, $R^2 = .22$, $R^2_{adj} = .20$, $F (6, 248) = 11.66$, $p < .001$. Overall, the six predictors explained 22 % of the variance of idea promotion. As expected, dynamic structural framework ($\beta = .19$, $p < .01$), control of workplace decisions ($\beta = .26$, $p < 01$) and commitment ($\beta = .21$, $p < .01$) significantly predict idea promotion, explaining 2 %, 4 % , and 3 % of variance respectively. Fluidity in information sharing ($\beta = -.01$), control ($\beta = -.03$) and challenge ($\beta = .03$) did not uniquely explain any variance of idea promotion. Hence, the analysis indicates that each of the expected predictors, significantly and uniquely predict the criterion.

For idea implementation, a significant overall relationship was found; $R = .49$, $R^2 = .24$, $R^2_{adj} = .22$, $F (6, 248) = 12.94$, $p < .001$. Overall, the six predictors explained 24 % of the variance of idea implementation. As in the previous analyses, dynamic structural framework ($\beta = .19$, $p < .01$), control of workplace decisions ($\beta = .26$, $p < .01$) and

commitment ($\beta = .21$, $p < .01$) significantly predict idea implementation, explaining 2 %, 4 %, and 3 % of variance respectively. Fluidity in information sharing ($\beta = .00$), challenge ($\beta = .04$) and control ($\beta = .02$) failed to show any significant, unique predictive ability on idea implementation. Hence, this indicates that each of the expected predictors uniquely predict the criterion.

Summary of Results

To sum up, hypothesis 1 and 2 were confirmed. It was shown that, overall, organizational empowerment explained 17 percent of innovativeness variance, while hardiness explained about 10 percent of variance. More specifically, the dimensions of organizational empowerment explained between 14 and 19 percent of variance of each innovativeness dimension, while the hardiness dimensions explained between 8 and 13 percent of variance of idea generation, promotion and implementation.

Hypothesis 3 was not confirmed, in that hardiness did not show any buffering effect between organizational empowerment and innovativeness. Rather, each construct actually uniquely explain variance of innovativeness, so that organizational empowerment and hardiness combine to explain between 22 and 24 percent of variance of the innovativeness dimensions.

Furthermore, it was found that the dimensions of organizational empowerment and hardiness differed in explanatory power of each dimension of innovativeness. Basically, the organizational empowerment dimensions of dynamic structural framework and control of workplace decisions, as well as the hardiness dimension of commitment, were all important, unique predictors for all three dimensions of innovativeness. The

hardiness dimension of challenge had unique explanatory power of idea generation. Fluidity in information sharing (organizational empowerment) and control (hardiness) did not show any unique predictive ability on any of the innovativeness dimensions.

Discussion

The purpose of the current study was to show that organizational empowerment is positively related to individual innovativeness, that psychological hardiness is positively related to innovativeness, and that psychological hardiness functions as a moderating factor between organizational empowerment and innovativeness. It was hypothesized that the three dimensions of organizational empowerment (dynamic structural framework, control of workplace decisions, and fluidity in information sharing) are positively related to the three stages of individual innovativeness (idea generation, promotion and implementation), that the three dimensions of psychological hardiness (commitment, control and challenge) are positively related to the three stages of individual innovativeness, and that the three dimensions of psychological hardiness acts as moderators between the three dimensions of perceived organizational empowerment and the three stages of individual innovativeness. This study found support for the two first hypotheses; the dimensions of organizational empowerment and psychological hardiness were positively related to the dimensions of individual innovativeness. However, no support for the third hypothesis concerning the moderating effect of psychological hardiness was found.

Important Findings

Overall, the three dimensions of organizational empowerment explained a substantial amount of variance (about 20%) of the innovativeness dimensions. Similarly, the psychological hardiness dimensions also explained a considerable amount of variance (about 10%) of the three dimensions of innovativeness. Contrary to what was

hypothesized, the study did not find that hardiness moderates the relationship between organizational empowerment and innovativeness, but that it is a unique contributor adding explained variance of innovativeness. Hence, this study found that organizational empowerment and hardiness are two distinct factors - one concerning the organization (i.e., the environment) and the other concerning the employee (i.e., personality).

Furthermore, the dimensions of organizational empowerment and hardiness were not equally important for each of the innovativeness dimensions; the organizational empowerment dimensions of dynamic structural framework and control of workplace decisions, as well as the hardiness dimension of commitment were important unique contributors to all of the dimensions of innovativeness. In addition, challenge (hardiness), was an important, unique contributor to idea generation. Interestingly, the organizational empowerment dimension of fluidity in information sharing, and the hardiness dimension of control were not important, unique contributors to any of the innovativeness dimensions.

What this means is that in order to increase innovativeness among employees (if so is desired), the organization should primarily focus on creating an organizational structure, through a set of clear, modifiable guidelines, that aid employee decision making both procedurally and behaviorally (dynamic structural framework), and that gives employees control over decisions whenever possible (control of workplace decisions).

An organization should also primarily look at how employee personality plays a part in innovativeness. As indicated in this study, involvement with people and events in

one's life (commitment), is in itself an important factor in individual innovativeness. In addition, the belief that change is positive and an opportunity to learn new things (challenge), is important for the identification of problems/issues and the bringing forth of ideas/solutions (idea generation).

Theoretical Implications

This study gives credence to the findings made by Gebert et al. (2003), that there is a linear relationship between organizational empowerment and innovativeness, and that a company needs all three dimensions of organizational empowerment to encourage innovativeness. The current research also found that the results hold true for individual innovativeness, in addition to organizational level innovativeness that was the focal point of Gebert et al. (2003).

Furthermore, the current study found evidence for individual differences in psychological hardiness being related to innovativeness - findings similar to Maddi et al. (2006). More specifically, it was found that being engaged with people and events in one's own life (including work-life), was the most important facet of hardiness in terms of all aspects of innovativeness, and that the belief in change being positive and an opportunity to learn was important for idea generation. However, none of these dimensions of hardiness could explain all the variance hardiness explained on any single dimension of innovativeness, so it can be asserted that the three dimensions of hardiness act in cohort, and are all necessary for innovativeness.

Practical Implications

This study highlights the importance of organizational empowerment and

hardiness on innovativeness in organizations. Moreover, it emphasizes the dimensionality of the constructs. Hence, evidence from the present study indicates that some aspects of organizational empowerment and hardiness are more important for innovativeness than other, but that it is still better for management wanting to increase innovativeness in their organizations to focus on all dimensions of the constructs rather than only the ones that show unique predictability.

So, in order to increase organizational empowerment, an organization has to focus on creating a structure that aid employee decision making - both procedurally and behaviorally, ensuring that decisions are made at the lowest possible level, and that information gets to the individual employee who needs it. By making sure that all three aspects of organizational empowerment is addressed, synergy can be attained and the organization is more likely to see a substantial increase in innovativeness among it's employees.

Psychological hardiness, on the other hand, is fundamentally a personality construct that is harder to instill in employees than organizational empowerment, which depend on actions made by management. However, Maddi (2002) suggests that hardiness can be increased through training, by increasing employees' involvement with people and events in their lives, and by fostering a belief that effort leads to influence and that change is positive and an opportunity to learn new things.

Strengths of Study

This study showed clear evidence for and established a link between perceived organizational empowerment and individual innovativeness. Furthermore, it took the

dimensionality of the constructs into account, showing that certain dimensions of organizational empowerment (dynamic structural framework and control of workplace decisions) are more important for all three stages of innovativeness. The evidence presented here gives a more refined picture of how empowerment and innovativeness are related, compared with the simple assessment of the overall relationship.

This study also takes into account personality, showing that individuals differ in their innovativeness depending on their level of hardiness. Moreover, the evidence indicated that the hardiness dimension of commitment was the most important predictor of all aspects of innovativeness, and that challenge was important for idea generation. Again, without loosing sight of the value of treating both organizational empowerment and hardiness as multi-dimensional constructs that works best in cohort, it is clearly useful to make note of the level of importance of each dimension to idea generation, promotion, and implementation.

One other noteworthy strength of this study was the varied sample of participants. The fact that the participants differed greatly in terms of age, gender, tenure, hours worked per week, level of education, type of jobs performed, and type of industry can only add to the generalizability of the results.

Limitations

One clear weakness of this study was the lack of adequate reliability of two of the dimensions of organizational empowerment (fluidity in information sharing and control of workplace decisions) and of all the dimensions of hardiness. Furthermore, intercorrelations between the hardiness dimensions were also somewhat low, which

might be explained by the lack of reliability of the scales for control, challenge and commitment. The lack of reliability of the organizational empowerment and hardiness measures might also have hampered the predictive power of the measures on the dimensions of innovativeness, which again speaks to the need to improve the measures through better and/or increased number of items for each scale (Spector, 1993).

Another limitation that needs to be addressed is the type of measure used in this study. All the measures were based on self-report, which can have problems related to social desirability, honesty and accuracy. It is possible that some participants overestimate or underestimate their responses, so results gets skewed in one direction. However, it can be presumed that with a large enough sample size, individual 'quirks' will not impact the results in any particular direction.

Furthermore, the use of self-report on innovativeness in particular, might be seen as questionable, since employees might be tempted to see themselves as innovators. Objective measures (e.g. number of suggestions made by an employee), or subjective measures made by the supervisor might prove a solution. However, this raises the question of whether the objective measures or the supervisor ratings are able to pick up on the smaller scale, day-to-day, innovativeness that employees may engage in (Dorenbosch et al., 2005).

Future Research

One important aspect of this study that needs to be addressed in the future is the reliability of the dimensions of organizational empowerment and hardiness that did not show adequate reliability here. Lack of reliability hampers the robustness of the findings

and could quite possibly impede the explanatory power of the constructs themselves. An effort should therefore be made to improve the current items of the scales and to add additional items to ensure solid reliability.

It would also increase the robustness of the current findings if similar results were found using different measures (other than self-report), such as supervisor ratings of employee innovativeness and objective measures. Number of suggestions made by employees and amount of patents made by R&D departments are possible, albeit limited, objective measures of innovativeness that have been used in past research (Scott & Bruce, 1994). Additionally, it might be interesting to investigate the impact individual innovativeness has on organization-wide innovation.

In terms of organizational empowerment, it might be interesting to look at other potential beneficial outcomes in addition to innovativeness. Job performance and organizational citizenship behavior comes to mind as constructs that should have a positive relationship with the dimensions of organizational empowerment. In this regard, it might also be worthwhile to investigate whether or not personality (i.e. hardiness) has a moderating effect on the relationship between organizational empowerment and other outcome measures.

Final Thoughts

This study adds to the mounting evidence of the benefits of empowerment in organizations. In an era of increasing globalization, where the competitive "playing field" gets more leveled by the day, leaders need to recognize that the future health of their organizations are not only dependent on the few at the top, but on every employee.

It may not have been the case in the past, but in business today, people really *are* "the most important resource."

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Appendix A

Survey and Consent Form

Please answer the following questions to the best of your ability, being as *honest* and *accurate* as possible. There are no right or wrong answers. Your answers are completely confidential. D*o not* write your name in this booklet.

Personal Views

People differ on how they cope with situations in their life. This is often based on the views they have of themselves and their life in general.

Please answer each statement by circling the number that is *most true* to your *current views and life situation:*

	1 Not at all true	2 Somewhat true	3 True	4 Very true
By working hard, I can always achieve my goals	1	2	3	4
I don't like to make changes in my everyday schedule	1	2	3	4
I really look forward to my work	1	2	3	4
When I make plans, I'm certain I can make them work	1	2	3	4
No matter how hard I try, my efforts usually accomplish little	1	2	3	4
I like a lot of variety in my work	1	2	3	4
Most of the time, people listen carefully to what I have to say	1	2	3	4
Thinking of oneself as a free person just leads to frustration	1	2	3	4
Trying my best at what I attempt usually pays off in the end	1	2	3	4
My mistakes are usually very difficult to correct	1	2	3	4
It bothers me when my daily routine gets interrupted	1	2	3	4
I often wake up eager to take up life wherever it left off	1	2	3	4
Lots of times, I really don't know my own mind	1	2	3	4
Changes in routine provoke me to learn	1	2	3	4
Most days, life is really interesting and exciting for me	1	2	3	4
Its hard to imagine anyone getting excited about working	1	2	3	4

Organizational Empowerment

Organizations vary in the amount of autonomy given to employees, how much information is shared, and how the organizational framework is structured to accommodate empowerment.

Based on your perceptions, please indicate the extent to which your current/most recent organization demonstrates the following:

	1 Never	2 Sometimes	3 Often	4 Always
The organization provides information on what it wants to accomplish in the future	1	2	3	4
Employees have a say in changing company policies	1	2	3	4
Employees have discretion in when they take their paid leave of absence	1	2	3	4
The organization encourage risk taking with regard to work production	1	2	3	4
Employees are provided with financial records of the organization	1	2	3	4
"Thinking out of the box" behavior is appreciated	1	2	3	4
Information is provided on how organizational objectives are going to be met	1	2	3	4
Employees have a say in defining their job responsibilities	1	2	3	4
Employees have a say in the production teams to which they are assigned	1	2	3	4
Employees have input in the hiring of new employees	1	2	3	4
The organization provides employees with information on it's clients	1	2	3	4
While performing job duties, employees are encouraged to use independent problem solving skills	1	2	3	4
Employees have access to the information in their personal work-files	1	2	3	4
The company publishes information on the organization's reward structure	1	2	3	4
The organization has established production guidelines	1	2	3	4
Employees have a say in setting their own production standards	1	2	3	4
Employees provide reviews of their manager	1	2	3	4

Employees have a say in the establishing of their own retirement plans	1	2	3	4
The organization has an efficient way to disseminate information to all levels of employees	1	2	3	4

Innovative Work Behavior

Innovation is a process involving both the generation and implementation of ideas. As such, it requires a wide variety of specific behaviors on the part of individuals. While some people might exhibit all behaviors involved in innovation, others may exhibit only one or a few types of behavior.

Please rate yourself on *the extent* to which you engage(d) in the behaviors below in your current/most recent organization:

	1 Never	**2 Sometimes**	**3 Often**	**4 Always**
Creating new ideas for difficult issues	1	2	3	4
Searching out new working methods, techniques or instruments	1	2	3	4
Generating original solutions to problems	1	2	3	4
Mobilizing support for innovative ideas	1	2	3	4
Acquiring approval for innovative ideas	1	2	3	4
Making important organizational members enthusiastic for innovative ideas	1	2	3	4
Transforming innovative ideas into useful applications	1	2	3	4
Introducing innovative ideas into the work environment in a systematic way	1	2	3	4
Evaluating the utility of innovative ideas	1	2	3	4

Please answer the following items concerning demographics:

Age: _____ **Gender:** Male: _____ Female: _____

Highest level of education completed:

High school: _____ Bachelor-level degree: _____
Masters-level degree: _____ PhD.-level degree: _____ Other: _____

How long have you been working for your current (most recent) employer: _____ years _____ months

How many hours do (did) you typically work each week: _____ hours

Job Title:_____

Size of the organization (approx. number of employees):

< 20 _____ 20-99 _____ 100-499 _____
500-2,499 _____ 2,499-10,000 _____ > 10,000 _____

Industry/Type of business: _____

Thank you for your participation!

Agreement to Participate in Research

Responsible Investigator: Leif Roberg, M.S. Candidate, San Jose State University
Title of Protocol: Investigating the Moderating Effect of Psychological Hardiness On the Relationship Between Organizational Empowerment and Individual Innovative Behavior

1. You have been asked to participate in a research study investigating how psychological hardiness (resiliency under stress) affect the degree of innovativeness of individuals in an empowered environment.
2. You will be asked to fill out the following questionnaire.
3. No risks (physiological or psychological) are anticipated.
4. No discernible benefits are expected on the part of the subject.
5. Although the results of this study may be published, no information that could identify you will be included.
6. Eligible students will get credit for participating. No other compensation is available.

Questions about this research may be addressed to
Leif Roberg, Principal investigator
Phone: 408-667-7216
Complaints about the research may be presented to
Dr. Sheila Bienenfeld, Chair of Psychology, San Jose State University
Phone: 408-924-5600
Questions about a research subjects' rights, or research-related injury may be presented to
Pamela Stacks, Ph.D., Associate Vice President,
Graduate Studies and Research, San Jose State University
Phone: (408) 924-2480.

No service of any kind, to which you are otherwise entitled, will be lost or jeopardized if you choose to "not participate" in the study.

Your consent is being given voluntarily. You may refuse to participate in the entire study or in any part of the study. You have the right to not answer questions you do not wish to answer. If you decide to participate in the study, you are free to withdraw at any time without any negative effect on your relations with San Jose State University or with any other participating institutions or agencies.

At the time that you sign this consent form, you will receive a copy of it for your records, signed and dated by the investigator.

The signature of a subject on this document indicates agreement to participate in the study.
The signature of a researcher on this document indicates agreement to include the above named subject in the research and attestation that the subject has been fully informed of his or her rights.

_____ _____
Signature Date

_____ _____
Investigator's Signature Date